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FORM PTO-1390 (Modified)
(REV. 11-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

50029-00001

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371**

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

10/018589

INTERNATIONAL APPLICATION NO.
PCT/DE00/01871

INTERNATIONAL FILING DATE
13 June 2000

PRIORITY DATE CLAIMED
14 June 1999

TITLE OF INVENTION

**METHOD AND DEVICE FOR ENABLING A DIRECT ACCESS FOR INDIVIDUAL SUBSCRIBERS OF A
DIGITAL MOBILE RADIO TELEPHONE NETWORK TO AVAILABLE CELL BROADCAST SERVICES**

APPLICANT(S) FOR DO/EO/US

Hans Zschintzsch, Dahlienweg 4, D-53639 Konigswinter, Germany

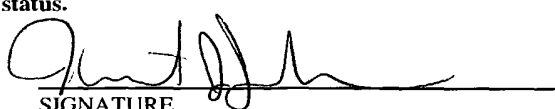
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☐ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☒ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☐ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☒ Certificate of Mailing by Express Mail
23. ☒ Other items or information:

Return postcard

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.53)		INTERNATIONAL APPLICATION NO.		ATTORNEY'S DOCKET NUMBER	
10/018589		PCT/DE00/01871		50029-00001	
24. The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :					
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO				\$1040.00	
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO				\$890.00	
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO				\$740.00	
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4)				\$710.00	
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)				\$100.00	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$890.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than _____ months from the earliest claimed priority date (37 CFR 1.492 (e)). <input type="checkbox"/> 20 <input type="checkbox"/> 30				\$0.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	9 - 20 =	0	x \$18.00	\$0.00	
Independent claims	2 - 3 =	0	x \$84.00	\$0.00	
Multiple Dependent Claims (check if applicable).			<input checked="" type="checkbox"/>	\$280.00	
TOTAL OF ABOVE CALCULATIONS =				\$1,170.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27). The fees indicated above are reduced by 1/2.				\$0.00	
SUBTOTAL =				\$1,170.00	
Processing fee of \$130.00 for furnishing the English translation later than _____ months from the earliest claimed priority date (37 CFR 1.492 (f)). <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30				\$130.00	
TOTAL NATIONAL FEE =				\$1,300.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable):			<input checked="" type="checkbox"/>	\$40.00	
TOTAL FEES ENCLOSED =				\$1,340.00	
				Amount to be: refunded	\$
				charged	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$1,340.00 to cover the above fees is enclosed.					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-1419 A duplicate copy of this sheet is enclosed.					
d. <input type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:					
Kenneth J. Johnson, Esq. Marsh Fischmann & Breyfogle LLP 3151 South Vaughn Way, Suite 411 Aurora, Colorado 80014 (303) 338-0997					
 SIGNATURE					
Kenneth J. Johnson NAME					
36,834 REGISTRATION NUMBER					
December 12, 2001 DATE					

T99008 PCT

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DeTeMobil Deutsche Telekom MobilNet GmbH, Bonn

A process and a device to allow direct access for individual subscribers to a digital cellular phone network with existing cell broadcast services.

Description

The invention concerns a process and a device to allow direct access for individual subscribers to a digital cellular phone network with existing cell broadcast services.

Subscribers in cellular phone networks have the possibility of sending short messages. Normally, a short message is sent to exactly one other cell-phone subscriber or exactly one receiver on the fixed network. The cell broadcast service, on the other hand, makes it possible to send short messages to as many subscribers as desired in a defined area (radio principle). These messages usually originate with information providers that are connected to the Cell Broadcast Center (CBC) over a fixed network connection. It has been possible thus far for an individual subscriber to receive Cell Broadcast messages over his cellular phone set, but it is not possible for him to reach several other subscribers directly over his set using Cell Broadcast.

EP-A-0 851 697 discloses a system for making direct access possible for individual subscribers to a digital cellular phone network with existing Cell Broadcast services. The subscriber's cellular phone sets are already equipped to exchange point-to-point short messages with a short-message center over the cellular phone network, whereby one forwards short messages declared a Cell Broadcast message to a Cell Broadcast Center, and the message is beamed out over the cellular phone network as a Cell Broadcast.

The problem of the invention is to design a method and a device to make direct access possible for individual subscribers to a digital cellular phone network with existing cell broadcast services in a more comfortable and secure way.

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The invention solves this problem with the features in the subclaims.

The invention combines both services of point-to-point short-message connection (SMS PP) and cell broadcast (CB). A coupling instance in the form of a server or gateway accepts point-to-point short messages, does the necessary tests, adjustments and conversions of the messages and forwards them to the Cell Broadcast Center by means of a process valid for Cell Broadcast Centers. It can be that senders in the cellular phone networks are authenticated, since they go through the regular authentication procedure when they log onto the cellular phone network. The invention provides an authentication component and/or filter component in the coupling instance.

It is essential—and the main advantage compared to similar solutions—that the properties necessary for using the process already exist in the cellular phone sets.

According to the invention, a regular short message (SMS PP) is sent via the short-message center (SMSC) to a certain “subscriber,” in this case the coupling instance. There, the messages are processed and sent to the Cell Broadcast Center, through which a Cell Broadcast call is initiated in a certain broadcast area.

It is also essential that the parameters necessary for using call broadcast, like for example giving the area into which the broadcast message is to be beamed, can be specified in the message text. The broadcast areas can be a single point cell in the minimum case, or the whole area which the cellular phone network serves in the maximum case.

But, if need be, the necessary parameters can also be added by the coupling instance. For example, a certain broadcast area can be preselected and set by the subscriber, the network operator or provider and then inserted automatically into the broadcast message by the coupling instance.

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The strategy whereby this happens can be chosen relatively freely, but it can also be chosen depending on the finer workings of the intended application. Basically all applications in which I:N communication relations are important can be made to run more efficiently.

Basically, the invention uses the accounting methods that already exist on the cellular phone network, i.e., accounting methods on the actual cellular phone network can also be used in SMSC and CBC for the process in the invention.

But the coupling instance can also be provided with accounting components of its own.

The process can be used in all cellular phone networks in which point-to-point messages and broadcast messages are offered or supported.

The invention will be explained in greater detail below with reference to the examples of embodiment and a figure in a drawing. Other features and advantages will emerge from the drawing and the description of it.

Figure 1 shows a short-message center 2, which receives a short message 6 from a mobile station 1. The format is a regular point-to-point short message 6, but in the invention, it is declared a Cell Broadcast message by the subscriber 1. This can be achieved by setting a certain parameter in the SMS message. Another parameter is also in the SMS message that determines the area into which the Cell Broadcast message is to be beamed.

The SMS 6 declared a Cell Broadcast message goes to a coupling instance 3 connected to the short-message center 2, in which the necessary tests, format adjustments or conversions of the message are done before it is forwarded in a suitable format to the Cell Broadcast Center 4. The Cell Broadcast Center 4 takes the necessary measures, which are known, so that the CB message 7 is beamed into the predetermined area to the mobile station 5 that is found there.

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The coupling instance 3 can contain other devices 8, which are responsible for billing the service, for example, or can be connected to them.

There can also be an authentication/filter instance 9 that checks the subscriber's authorization to use this service.

In one specific application, the authorized mobile phone subscriber can be given the ability to produce cell broadcast messages himself, for example in connection with a CB (small) display service. All that is needed for subscription/use is authorization to use the regular SNS services (SMS-MO, SMS-MT).

The area in which the CB message 7 is valid, the so-called CB area, is determined by giving the (Telekom) local dialing prefix, the postal code or the vehicle license number in the SMS PP message sent to the short-message center 2.

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Legend for Drawings

- 1 Mobile station (SMS PP sender)
- 2 Short-message Center (SMSC)
- 3 Coupling instance
- 4 Cell Broadcast Center (CBC)
- 5 Mobile Stations (CB receivers)
- 6 SMS PP message
- 7 CB message
- 8 Accounting instance
- 9 Authentication/filter instance

Patent Claims

1. A process of allowing direct access for individual subscribers to a digital cellular phone network with existing cell broadcast services, whereby the cellular phones of the subscribers are equipped to exchange point-to-point short messages with a short-message center over the cellular phone network, whereby short messages declared cell broadcast messages are forwarded to a cell broadcast center, characterized by the fact that the point-to-point short messages are accepted from a coupling instance connected to the short-message center; the necessary tests, adjustments and conversions of the messages are done in the coupling instance; an authentication and/or filtering and/or selection of the subscribers takes places; and the messages are forwarded to the cell broadcast center by means of a process that applies to the cell broadcast center.
2. The process in Claim 1, characterized by the fact that the parameters necessary for using cell broadcast, such as giving the area into which the broadcast message is to be beamed, are given by the subscriber in the point-to-point short message.
3. The process in Claim 1, characterized by the fact that the parameters necessary for using cell broadcast are set and given by the subscriber and/or network provider beforehand and are added to the broadcast message by the coupling instance.
4. The process in one of Claims 1 to 3, characterized by the fact that the area to which the broadcast message applies is determined by giving the dialing prefix, the postal code or the vehicle license number.
5. The process in one of Claims 1 to 4, characterized by the fact that accounting methods existing in the cellular phone network are used.
6. The process in one of Claims 1 to 5, characterized by the fact that the accounting methods provided in the coupling instance are used.

7. A device for allowing direct access for individual subscribers to a digital cellular phone network with existing cell broadcast services, whereby the cellular phones of the subscribers are equipped to exchange point-to-point short messages with a short-message center over the cellular phone network, whereby short messages declared cell broadcast messages are forwarded to a cell broadcast center, characterized by the fact that:
a coupling instance (3) connected to the short message center (2) is provided, which accepts point-to-point short messages (6); by the fact that in the coupling instance (3) means of doing the necessary tests, adjustments and conversions of the messages and an authentication component and/or filter component (9) are provided; and by the fact that the coupling instance (3) is connected to the cell broadcast center (4) to which the processed messages are forwarded.
8. The device in Claim 7, characterized by the fact that the point-to-point short messages (6) contain parameters for defining the broadcast area and, if necessary, other parameters.
9. The device in one of Claims 7 or 8, characterized by the fact that an accounting instance (8) is provided in the coupling instance (3).

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES
PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro



(43) Internationales Veröffentlichungsdatum
21. Dezember 2000 (21.12.2000)

PCT

(10) Internationale Veröffentlichungsnummer
WO 00/78060 A2

(51) Internationale Patentklassifikation⁷: **H04Q 7/00**

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(22) Internationales Anmeldedatum:
13. Juni 2000 (13.06.2000)

(25) Einreichungssprache: **Deutsch**

(26) Veröffentlichungssprache: **Deutsch**

(30) Angaben zur Priorität:
199 27 050.3 14. Juni 1999 (14.06.1999) **DE**

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(72) Erfinder; und

(75) Erfinder/Anmelder (nur für US): **ZSCHINTZSCH, Hans** [DE/DE]; Dahlienweg 4, D-53639 Königswinter (DE).

(81) Bestimmungsstaaten (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CZ, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Bestimmungsstaaten (regional): ARIPO-Patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), curassisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI-Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Veröffentlicht:

— Ohne internationalen Recherchenbericht und erneut zu veröffentlichen nach Erhalt des Berichts.

Zur Erklärung der Zweibuchstaben-Codes, und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

(54) Title: METHOD AND DEVICE FOR ENABLING A DIRECT ACCESS FOR INDIVIDUAL SUBSCRIBERS OF A DIGITAL MOBILE RADIO TELEPHONE NETWORK TO AVAILABLE CELL BROADCAST SERVICES

(54) Bezeichnung: VERFAHREN UND VORRICHTUNG ZUR ERMÖGLICHUNG EINES DIREKTEN ZUGANGS FÜR INDIVIDUELLE TEILNEHMER EINES DIGITALEN MOBILFUNKNETZES ZUR VORHANDENEN CELL BROADCAST DIENSTEN

(57) Abstract: The invention relates to a method and device for enabling a direct access for individual subscribers of a digital mobile radio telephone network to available cell broadcast services, whereby the mobile radio telephone terminals of the subscribers are equipped for exchanging point-to-point short messages with a short message center over the mobile radio telephone network. The invention is characterized in that point-to-point short messages are received by a coupling instance connected to the short message center, in that the messages are edited in the coupling instance, and in that the messages are forwarded to a cell broadcast center by means of a method that is valid therefor. This method makes it possible for each authorized mobile radio telephone subscriber to send broadcast messages directly, via the terminal thereof, to other mobile radio telephone subscribers.

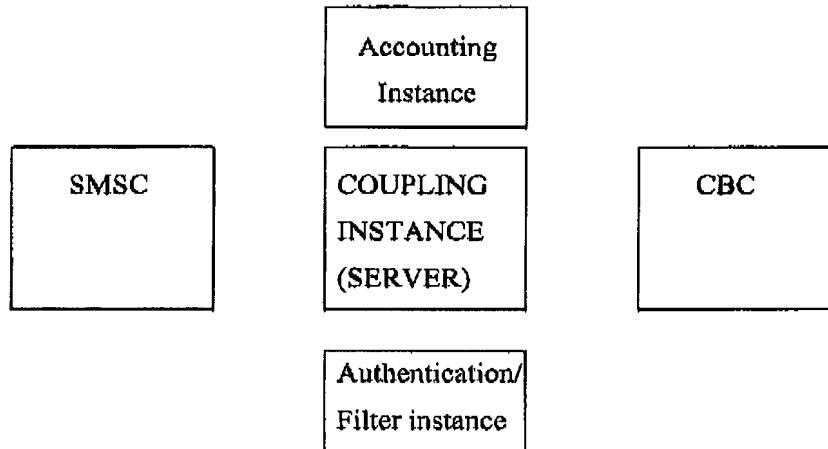
(57) Zusammenfassung: Die Erfindung betrifft ein Verfahren und eine Vorrichtung zur Ermöglichung eines direkten Zugangs für individuelle Teilnehmer eines digitalen Mobilfunknetzes zu vorhandenen Cell Broadcast Diensten, wobei die Mobilfunkendgeräte der Teilnehmer ausgerüstet sind, um über das Mobilfunknetz Punkt-zu-Punkt Kurznachrichten mit einer Kurznachrichtenzentrale auszutauschen. Die Erfindung zeichnet sich dadurch aus, dass Punkt-zu-Punkt Kurznachrichten von einer mit der Kurznachrichtenzentrale verbundenen Koppelinstanz entgegengenommen werden, dass in der Koppelinstanz eine Aufbereitung der Nachrichten vorgenommen wird, und dass die Nachrichten mittels eines für Cell Broadcast Center geltenden Verfahrens an ein Cell Broadcast Center weitergeleitet werden. Durch dieses Verfahren ist es jedem berechtigten Mobilfunkteilnehmer möglich, Broadcast Nachrichten direkt über sein Endgerät an andere Mobilfunkteilnehmer auszusenden.

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Figure 1



RULE 63 (37 C.F.R. '1.63)
DECLARATION
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled "METHOD AND DEVICE FOR ENABLING A DIRECT ACCESS FOR INDIVIDUAL SUBSCRIBERS OF A DIGITAL MOBILE RADIO TELEPHONE NETWORK TO AVAILABLE CELL BROADCAST SERVICES", the specification of which is identified as Attorney File No 50029-00001 and attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability in accordance with 37 C.F.R. '1.56 as set forth on the attached sheet indicated Page 3 hereof and which I have read.

I hereby claim foreign priority benefits under 35 U.S.C. '119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
<u>Number</u>	<u>Country</u>	<u>Day/Month/Year Filed</u>	<u>Yes</u>	<u>No</u>
19927050.3	Germany	14 June 1999	XX	

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below:

<u>Application Serial No.</u>	<u>Filing Date</u>
-------------------------------	--------------------

I hereby claim the benefit under 35 U.S.C. '120 of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. '112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. '1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

Application Serial No.Filing DateStatus: patented, pending, abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1-00 1) Inventor's Signature Hans Zschintzsch Date Dec 10, 2001Inventor's Name (typed): Hans Zschintzsch

Citizenship: German DEX

Residence: Dahlienweg 4, D-53639 Königswinter, Germany

Post Office Address*: Same as Residence

*Complete Post Office Address in full if different from Residence, otherwise indicate that the Post Office Address is "Same as Residence."

37 C.F.R. ' 1.56(a) and (b)
DUTY TO DISCLOSE INFORMATION MATERIAL
TO PATENTABILITY

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by ' 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application,
and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of a patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.*

*Note, 37 C.F.R. ' 1.97(h) states: "The filing of an information disclosure statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in ' 1.56(b)."